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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,572	11/11/2003	Michael Donovan Mitchell	8681RCR	4234

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THE PROCTER & GAMBLE COMPANY  
INTELLECTUAL PROPERTY DIVISION  
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CINCINNATI, OH 45224

EXAMINER
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KIM, SUN U

ART UNIT	PAPER NUMBER
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1723

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/705,572

Applicant(s)

MITCHELL ET AL.

Examiner

John Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-9 and 11-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/29/06 has been entered.
2. Claim 8 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 8 depends on claim 7. Claim 7 recites that "said mesoporous activated carbon particles have a sum of mesopore and macropore volumes of greater than 0.4 mL/g." However, claim 8 broadens above sum to between about 0.4 mL/g and about 2 mL/g. "About 0.4 mL/g" would include 0.39 mL/g.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-3, 5-6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koslow (US Pat. No. 6,630,016) in view of admitted prior art by Jagtoyen et al (US 2004/0040906 A1). Koslow teaches a filter device comprising a cartridge containing filter material comprising activated carbon coated with silver for purifying water containing bacteria (see col. 1, lines 41-63; col. 11, line 46 – col. 12, line 2). Koslow teaches the step of passing contaminated water through the filter to provide clean water (see col. 1, lines 12-26; col. 2, lines 21-34; col. 12, line 8 – col. 13, line 43). Koslow also teaches that the Filter Bacteria Log Removal (F-BLR) of greater than about 2 logs (see Table II, Example 11 E.coli (LRV) of 8.39) and a Filter Viruses Log Removal (F-VLR) of greater than about 1 log (see Table II, Example 11 MS2 (LRV) of 5.14). Claims 1 and 16 essentially differ from the filter device and method of using the filter device of Koslow in reciting a plurality of mesoporous activated carbon filter particles and a package comprising information. Applicant describes a filter made from known mesoporous and basic activated carbon powder such as Nuchar RGC in a Teflon housing (see Example 3; page 29, lines 13-29) wherein RGC has properties of F-BLR of about 3.0 log (see page 33, line 30 – page 34, line 5) and F-VLR of about 4.4 log (see page 34, line 29 – page 35, line 5) wherein mesoporous and basic activated carbon powder was mixed with low density polyethylene binder and molded. Koslow teaches that activated carbon powders are mixed with low density polyethylene binder and molded or extruded into a solid composite block (see col. 9, line 63 – col. 10, line 21; col. 11, line 45 – col. 12, line 2). Jagtoyen et al teaches a package containing filter comprising housing containing filter material of activated carbon and

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information that describes the use of the filter for removal of pathogens, particularly viruses (see paragraphs 0280-0283). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the activated carbon of Koslow with known mesoporous activated carbon filter particles e.g. RGC for enhanced bacteria and virus removal capability and pack the filter in a package containing useful information regarding the virus removing capability of the filter to inform consumer as suggested by Jagtoyen et al. Regarding claim 2, applicants describe that known mesoporous activated carbon powder e.g. Nuchar RGC has the sum of the mesopore and the macropore volumes of about 0.61 mL/g (see page 31, lines 16-21). Regarding claim 3, applicants describe that known mesoporous and basic activated carbon powder i.e. Nuchar RGC has properties of Bacterial Removal Index (BRI) of about 99.91% (see page 33, line 30 – page 34, line 4) and Virus Removal Index (VRI) of about 99.996% (see page 34, line 29 – page 35, line 3). Regarding claim 5, applicants describe that filter made from known mesoporous and basic activated carbon powder i.e. Nuchar RGC in Example 3 has single collector efficiency of 0.01864 and a filter coefficient of  $354.2 \text{ m}^{-1}$  (see page 37, line 26 – page 38, line 5). Regarding claim 6, applicants describe that known mesoporous and basic activated carbon powder i.e. Nuchar RGC has a point of zero charge of about 8.8 (see page 32, lines 11-12) and Oxidation Reduction Potential (ORP) of about 317 mV (see page 35, lines 20-22). Point of zero charge of activated carbon particles correlates with the ORP of the water containing the particles because the point of zero charge is a measure of the ability of the carbon to reduce oxygen (see page 13, lines 25-28). One of skill in the art would by routine experimentation find the optimum point zero charge and ORP for optimal ability for carbon to reduce oxygen. It is not inventive to discover the optimum or workable ranges by routine experimentation when the

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general conditions of a claim are disclosed in the prior art. In re Aller, 105 USPQ 233, 235 (CCPA 1955).

5. Claims 7-9, 11-12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koslow in view of admitted prior art by applicant. Koslow teaches a filter device comprising a cartridge containing filter material comprising activated carbon coated with silver for purifying water containing bacteria (see col. 1, lines 41-63; col. 11, line 46 – col. 12, line 2). Koslow teaches the step of passing contaminated water through the filter to provide clean water (see col. 1, lines 12-26; col. 2, lines 21-34; col. 12, line 8 – col. 13, line 43). Koslow also teaches that the Filter Bacteria Log Removal (F-BLR) of greater than about 2 logs (see Table II, Example 11 E.coli (LRV) of 8.39) and a Filter Viruses Log Removal (F-VLR) of greater than about 1 log (see Table II, Example 11 MS2 (LRV) of 5.14). Claims 7 and 17 essentially differ from the filter and method of using the filter of Koslow in reciting a plurality of mesoporous activated carbon filter particles and the sum of mesopore and macropore volumes of greater than 0.4 mL/g. Applicant describes known mesoporous and basic activated carbon powder known as Nuchar RGC (see Example 3; page 29, lines 13-29) wherein RGC has properties of F-BLR of about 3.0 log (see page 33, line 30 – page 34, line 5) and F-VLR of about 4.4 log (see page 34, line 29 – page 35, line 5) and the sum of the mesopore and the macropore volumes of about 0.61 mL/g (see page 31, lines 16-21) wherein mesoporous and basic activated carbon powder was mixed with low density polyethylene binder and molded. Koslow teaches that activated carbon powders are mixed with low density polyethylene binder and molded or extruded into a solid composite block (see col. 9, line 63 – col. 10, line 21; col. 11, line 45 – col. 12, line 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to

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modify the activated carbon of Koslow with known mesoporous activated carbon filter particles e.g. RGC for enhanced bacteria and virus removal capability. Regarding claim 8, applicants describe that known mesoporous activated carbon powder e.g. Nuchar RGC has the sum of the mesopore and the macropore volumes of about 0.61 mL/g (see page 31, lines 16-21). Regarding claim 9, applicants describe that known mesoporous and basic activated carbon powder i.e. Nuchar RGC has properties of Bacterial Removal Index (BRI) of about 99.91% (see page 33, line 30 – page 34, line 4) and Virus Removal Index (VRI) of about 99.996% (see page 34, line 29 – page 35, line 3). Regarding claim 11, applicants describe that filter made from known mesoporous and basic activated carbon powder i.e. Nuchar RGC in Example 3 has single collector efficiency of 0.01864 and a filter coefficient of  $354.2 \text{ m}^{-1}$  (see page 37, line 26 – page 38, line 5). Regarding claim 12, applicants describe that known mesoporous and basic activated carbon powder i.e. Nuchar RGC has a point of zero charge of about 8.8 (see page 32, lines 11-12) and Oxidation Reduction Potential (ORP) of about 317 mV (see page 35, lines 20-22). Point of zero charge of activated carbon particles correlates with the ORP of the water containing the particles because the point of zero charge is a measure of the ability of the carbon to reduce oxygen (see page 13, lines 25-28). One of skill in the art would by routine experimentation find the optimum point zero charge and ORP for optimal ability for carbon to reduce oxygen. It is not inventive to discover the optimum or workable ranges by routine experimentation when the general conditions of a claim are disclosed in the prior art. In re Aller, 105 USPQ 233, 235 (CCPA 1955).

6. Claims 13 and 18 are rejected under 35 U.S.C. 103(a) as being anticipated by Koslow in view of admitted prior art by applicant. Koslow teaches a filter for providing potable water

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comprising: a housing having an inlet and an outlet (see col. 1, Lines 41-44) and a filter material disposed within the housing formed at least in part from a plurality of activated carbon filter particles (see col. 1, line 63 – col. 2, line 13) coated with silver (see col. 11, lines 45-62) wherein the filter material has a F-BLR of greater than about 2 logs, and a F-VLR of greater than about 1 log (Tables I and II). Koslow further teaches a filter comprising a combination of activated carbon, activated alumina, diatomaceous earth, clay, etc (see col. 5, lines 28-42). Koslow discloses passing contaminated water through the filter to provide potable water (see col. 1, lines 12-14; col. 2, Lines 21-35). Claims 13 and 18 essentially differ from the filter device and method of using the filter device of Koslow in reciting a plurality of mesoporous activated carbon filter particles. Applicant describes known mesoporous and basic activated carbon powder known as Nuchar RGC (see Example 3; page 29, lines 13-29) wherein RGC has properties of F-BLR of about 3.0 log (see page 33, line 30 – page 34, line 5) and F-VLR of about 4.4 log (see page 34, line 29 – page 35, line 5) wherein mesoporous and basic activated carbon powder was mixed with low density polyethylene binder and molded. Koslow teaches that activated carbon powders are mixed with low density polyethylene binder and molded or extruded into a solid composite block (see col. 9, line 63 – col. 10, line 21; col. 11, line 45 – col. 12, line 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the filter device of Koslow to include known mesoporous activated carbon filter particles e.g. RGC for enhanced bacteria and virus removal capability.

7. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koslow in view of admitted prior art by applicant as applied to claims 7 and 13 above, and further in view of Jagtoyen et al. Koslow in view of admitted prior art by applicant teaches the filter. Claims



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14-15 essentially differ from the filter of Koslow in view of admitted prior art by applicant in reciting a package for containing the filter and information provided on the package or housing for the filter or filter material. Jagtoyen et al teaches a package containing filter comprising housing containing filter material of activated carbon and information that describes the use of the filter for removal of pathogens, particularly viruses (see paragraphs 0280-0283). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to pack the filter of Koslow in view of admitted prior art by applicant in a package containing useful information regarding the virus removing capability of the filter to inform consumer as suggested by Jagtoyen et al.

8. Claims 1-3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al (US Pat. No. 6,827,854) in view of Koslow and Jagtoyen et al (US 2004/0040906 A1). Mitchell et al teach a filter device comprising a housing (20) having an inlet (24) and an outlet (26) and containing filter material comprising a plurality of mesoporous activated carbon filter particles (see figure 3; col. 2, lines 8-18; col. 5, lines 9-13) wherein the filter has a Filter Bacteria Log Removal (F-BLR) of greater than about 2 logs and a Filter Viruses Log Removal (F-VLR) of greater than about 1 log (see col. 9, lines 20-37). Mitchell et al teach the step of passing contaminated water through the filter to provide clean water (see col. 1, lines 14-25; col. 10, lines 50-65). Claims 1 and 16 essentially differ from the filter device and method of using the filter device of Mitchell et al in reciting silver coated particles and a package comprising information. Koslow teaches a filter device comprising a cartridge containing filter material comprising activated carbon coated with silver for purifying water containing bacteria (see col. 1, lines 41-63; col. 11, line 46 – col. 12, line 2). Jagtoyen et al teaches a package containing

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filter comprising housing containing filter material of activated carbon and information that describes the use of the filter for removal of pathogens, particularly viruses (see paragraphs 0280-0283). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the activated carbon of Mitchell et al with silver coating for providing biocidal capability as well as enriched microbiological interception capability as suggested by Koslow (see col. 7, lines 4-52) and pack the filter in a package containing useful information regarding the virus removing capability of the filter to inform consumer as suggested by Jagtoyen et al. Regarding claim 2, Mitchell et al teach that activated carbon has the sum of the mesopore and the macropore volumes of between about 0.4 mL/g and about 1.5 mL/g (see col. 9, lines 38-44). Regarding claim 3, Mitchell et al teach that the activated carbon particles has properties of Bacterial Removal Index (BRI) greater than about 99.9% (see col. 9, lines 20-25) and Virus Removal Index (VRI) of greater than about 90% (see col. 9, lines 29-33).

9. Claims 7-9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al in view of Koslow. Mitchell et al teach a filter device comprising a housing (20) having an inlet (24) and an outlet (26) and containing filter material comprising a plurality of mesoporous activated carbon filter particles (see figure 3; col. 2, lines 8-18; col. 5, lines 9-13) wherein the filter has a Filter Bacteria Log Removal (F-BLR) of greater than about 2 logs and a Filter Viruses Log Removal (F-VLR) of greater than about 1 log (see col. 9, lines 20-37) and the sum of the mesopore and the macropore volumes of between about 0.4 mL/g and about 1.5 mL/g (see col. 9, lines 38-44). Mitchell et al teach the step of passing contaminated water through the filter to provide clean water (see col. 1, lines 14-25; col. 10, lines 50-65). Claims 7 and 17 essentially differ from the filter device and method of using the filter device of Mitchell et al in

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reciting silver coated particles. Koslow teaches a filter device comprising a cartridge containing filter material comprising activated carbon coated with silver for purifying water containing bacteria (see col. 1, lines 41-63; col. 11, line 46 – col. 12, line 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the activated carbon of Mitchell et al with silver coating for providing biocidal capability as well as enriched microbiological interception capability as suggested by Koslow (see col. 7, lines 4-52).

Regarding claim 8, Mitchell et al teach that activated carbon has the sum of the mesopore and the macropore volumes of between about 0.4 mL/g and about 1.5 mL/g (see col. 9, lines 38-44).

Regarding claim 9, Mitchell et al teach that the activated carbon particles has properties of Bacterial Removal Index (BRI) greater than about 99.9% (see col. 9, lines 20-25) and Virus Removal Index (VRI) of greater than about 90% (see col. 9, lines 29-33).

10. Claims 13 and 18 are rejected under 35 U.S.C. 103(a) as being anticipated by Mitchell et al in view of Koslow. Mitchell et al teach a filter device comprising a housing (20) having an inlet (24) and an outlet (26) and containing filter material comprising a plurality of mesoporous activated carbon filter particles (see figure 3; col. 2, lines 8-18; col. 5, lines 9-13) wherein the filter has a Filter Bacteria Log Removal (F-BLR) of greater than about 2 logs and a Filter Viruses Log Removal (F-VLR) of greater than about 1 log (see col. 9, lines 20-37). Mitchell et al teach the step of passing contaminated water through the filter to provide clean water (see col. 1, lines 14-25; col. 10, lines 50-65). Claims 13 and 18 essentially differ from the filter device and method of Mitchell et al in reciting other materials including activated carbon coated with silver. Koslow teaches a filter for providing potable water comprising: a housing having an inlet and an outlet (see col. 1, Lines 41-44) and a filter material disposed within the housing formed at

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least in part from a plurality of activated carbon filter particles (see col. 1, line 63 – col. 2, line 13) coated with silver (see col. 11, lines 45-62) wherein the filter material has a F-BLR of greater than about 2 logs, and a F-VLR of greater than about 1 log (Tables I and II). Koslow further teaches a filter comprising a combination of activated carbon, activated alumina, diatomaceous earth, clay, etc (see col. 5, lines 28-42). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the filter device of Mitchell et al to include known activated carbon filter particles coated with silver for providing biocidal capability as well as enriched microbiological interception capability as suggested by Koslow (see col. 7, lines 4-52).

11. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al in view of Koslow as applied to claims 7 and 13 respectively above, and further in view of Jagtoyen et al. Mitchell et al in view of Koslow teaches the filter. Claims 14-15 essentially differ from the filter of Mitchell et al in view of Koslow in reciting a package for containing the filter and information provided on the package or housing for the filter or filter material. Jagtoyen et al teaches a package containing filter comprising housing containing filter material of activated carbon and information that describes the use of the filter for removal of pathogens, particularly viruses (see paragraphs 0280-0283). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to pack the filter of Mitchell et al in view of Koslow in a package containing useful information regarding the virus removing capability of the filter to inform consumer as suggested by Jagtoyen et al.

12. Applicant's arguments with respect to claims 1-3, 5-9 and 11-18 have been considered but are moot in view of the new ground(s) of rejection. Applicants argue that Nuchar RGC

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described in present application is in powder form and has not been transformed into the filter of the present invention. Koslow teaches that activated carbon powders are mixed with low density polyethylene binder and molded or extruded into a solid composite block (see col. 9, line 63 – col. 10, line 21; col. 11, line 45 – col. 12, line 2). Such process is also described in example 3 of present application. Hence, a filter made from known mesoporous activated carbon filter particles such as Nuchar RGC having inherent bacteria and virus removal capability by known process of Koslow would be obvious to a person of ordinary skill in the art to arrive at the claimed filters.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is 571-272-1142. The examiner can normally be reached on Monday-Friday 7 a.m. - 3:30 p.m..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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A handwritten signature in black ink, appearing to read "John Kim".

**John Kim**

**Primary Examiner**

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JK

1/16/07